

June 2013

Local Hazard Mitigation Plan Flood Control References and Overview

Multi-jurisdictional Local Hazard Mitigation Plan:

County of San Luis Obispo and San Luis Obispo County Flood Control and Water Conservation District

The initial adopted County LHMP of 2011 included reference to County Public Works Department and excluded references to the County Flood Control and Water Conservation District. Many of the references to Public Works are also references to, or in place of, the Flood Control District.

County Public Works staff also serves as Flood Control staff. As a result and due to the dual role of Public Works and Flood Control, the following are noted references to Public Works that actually or also references the Flood Control District.

In 2011, the County of San Luis Obispo hired ***Category Five Professional Consultants, Inc.*** to rewrite and update the original Plan. A second Local Hazard Mitigation Planning Group was developed consisting of past and new members including:

2011 LHMP, Page 13 (Dave Flynn serves as Flood Control staff):

In 2011, the County of San Luis Obispo hired ***Category Five Professional Consultants, Inc.*** to rewrite and update the original Plan. A second Local Hazard Mitigation Planning Group was developed consisting of past and new members including:

Name	Agency
Ron Alsop	County Office of Emergency Services
Warren Hoag	County Department of Planning and Building
Chuck Stevenson	County Department of Planning and Building
John Kelly	County Department of Planning-Geographic Technology and Design
Alan Peters	CAL FIRE
Dan Turner	County Office of Emergency Services
Dave Flynn	County Public Works Department
Michael Isensee	County Department of Agriculture and Weights and Measures
Robert Neumann	Category Five Professional Consultants
Sheri Eibschutz	Category Five Professional Consultants

From Page 14; note reference to flood ordinances

A. Incorporation of Existing Plans and Other Information

At the onset of and throughout the hazard mitigation planning process, all applicable local emergency operations plans and geotechnical reports were reviewed and incorporated into this mitigation plan. The following sources were used:

- County of San Luis Obispo General Plan including
 - Land Use Element
 - Open Space Element
 - Safety Element
- CAL FIRE/San Luis Obispo County Fire Management Plan
- California State Hazard Mitigation Plan
- Local and State land use regulations
- Flood ordinances
- Past disaster declarations
- Flood Insurance Rate Maps (FIRM's)

Page 23; the Board of Supervisors members also serve as the governing body of the Flood Control District:

I. Governing Body

The Board of Supervisors serves as the Legislative body of San Luis Obispo County for the planning and provision of services related to public needs and the requirements of State and Federal laws. California law provides for five Supervisors to be elected by district. Each Supervisor is elected for a four-year term. Two of the Supervisors' terms are staggered so that all Supervisors are not standing for election at the same time. As the elected representative of the people of San Luis Obispo County, the Board of Supervisors establishes overall County priorities and sets policy.

Page 27; includes natural hazards of floods and coastal storm:

A. Hazard Identification

Central California is susceptible to a number of both natural hazards. The State of California identifies the following types of major disasters and emergencies that California has encountered since 1950.

This HMP profiles the most significant of these hazards. Historical data, catastrophic potential, relevance to the jurisdiction, and the probability and potential magnitude of future occurrences were all used to reduce and prioritize the list of hazards to those most relevant to San Luis Obispo County.

The LHMP for San Luis Obispo County will be addressing natural hazards, which include:

- Earthquakes/Liquefaction
- Floods
- Landslides
- Tsunami and Seiche
- Wildfire
- Extreme Weather
- Coastal Storm / Coastal Erosion
- Biological Agents
- Pest Infestation and Disease

Pages 69 – 82; note the actual reference to, in **Plans and Programs on page 81 of the actual LHMP, the joint reference to the County and the Flood Control District as follows:** In San Luis Obispo County, the County Flood Control and Water Conservation District, through the County Public Works Department, is responsible for developing potential projects which could protect life and property from flood hazards through community involvement and establishing funding mechanisms. The District has the authority to maintain and construct flood control improvements on major drainage facilities located throughout the County when specific flood control zones are established.

2. Hazard: Flooding

Severity: Medium	Probability: Medium
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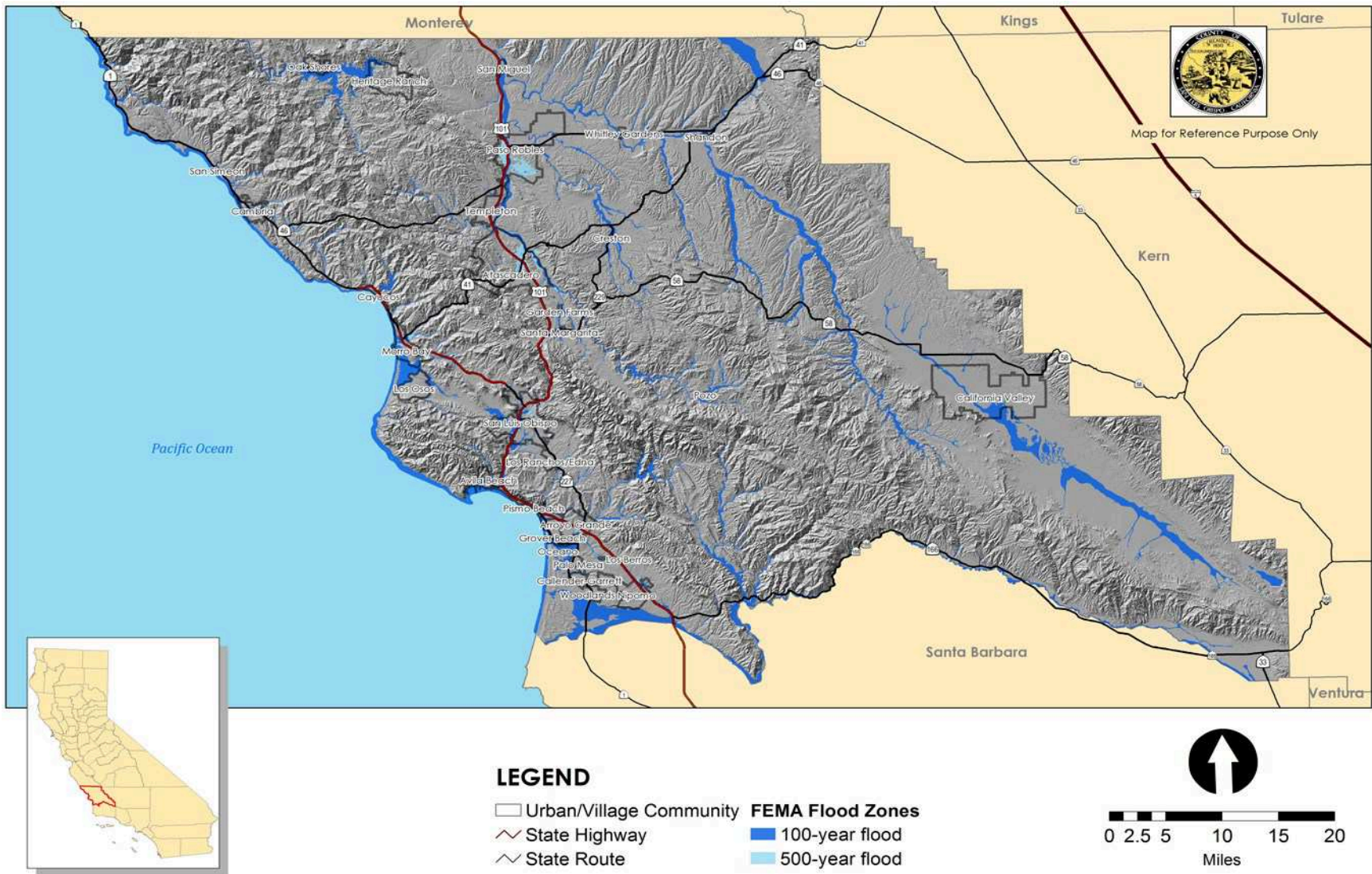
Hazard Definition

A flood is defined as an overflowing of water onto an area of land that is normally dry. Floods generally occur from natural weather related causes, such as a sudden snows melt, often in conjunction with a wet or rainy spring or with sudden and very heavy rain fall. Floods can also result from human causes such as a dam impoundment bursting.

For floodplain management purposes, the Federal Emergency Management Agency (FEMA) will often use the term “100-year flood” or “500-year flood” to describe the size or magnitude. These terms are misleading. It is not a flood that occurs once every 100 or 500 years. Rather, it is the flood elevation that has a 1 percent chance of being equaled or exceeded each year. Thus, a 100-year flood could occur more than once in a relatively short period of time.

The 100-year flood, which is the standard used by most federal and state agencies, is used by the National Flood Insurance Program (NFIP) as the standard for floodplain management and to determine the need for flood insurance. A structure located within a special flood hazard area shown on a map has a 26 percent chance of suffering flood damage during the term of a 30-year mortgage.

The following map (Map 5 from the San Luis Obispo County Safety Element) depicts the 100-year and 500-year floodplain.



History

San Luis Obispo County has experienced severe flooding events that have resulted in extensive property damage. Flooding hazards are most likely to exist along major river and stream courses including the Salinas River, San Luis Obispo Creek, Santa Rosa Creek, Arroyo Grande Creek, Morro Creek and Huerhuero Creek. Areas that have been recently affected by flooding impacts are the areas most to be likely to be affected by future events. Therefore, a historical perspective of the effects of recent flood events can provide useful insight in land use planning and reduction of future flood hazard risks.

The following table contains a list of previous flooding events throughout the County over the past fifty years.

Table 4-4: Major Floods in San Luis Obispo County

Incident Date	Location	Intensity	Incident Description
January-February 1969	San Luis Obispo County including Paso Robles, Avila, Pismo Beach, and San Luis Obispo	12 to 21 inches of rain	January 1969: a series of storms delivered 12-21 inches of rainfall over an 8 day period. In February, another storm brought over 5 inches of rain. The most severe damage to urban property occurred in the City of SLO, where San Luis Obispo Creek channel filled with debris and flow over-topped the channel banks and onto the city streets. Severe damages were sustained by streets, highways, and utilities through-out the County. In Cambria, the water-supply system was damaged. The sewage-treatment plants at Morro Bay, Avila Beach, and Pismo Beach were inundated by both floods.
January, 1973	City of San Luis Obispo		Unusually heavy rainfall occurred over a 10 hour period. San Luis Obispo Creek, and its tributary, Stenner Creek, overtopped their banks and inundated a wide area of downtown San Luis Obispo.
February 22, 1993	Cambria	2.5 inches of rain	This flash flood occurred in a 2 hour period causing \$500,000 damage to 4 businesses and several residences.
January and March, 1995	City of San Luis Obispo, Cambria		Serious flooding occurred in all coastal and many inland streams. Extensive damaged occurred in the City of San Luis Obispo and the San Luis Obispo Golf Course. Cambria had up to 6 feet of water in areas.
May 5, 1998	Southern San Luis Obispo		Heavy rain produced flash flooding and mudslides across Southern SLO County and closed portions of Highway 166.
January 11, 2001	Coastal Flooding		An extremely large swell, combined with high astronomical tides produced heavy surf and

			flooding of coastal areas along Central and Southern California.
March 5, 2001	San Luis Obispo County including Nipomo, Arroyo Grande, Oceano and Pismo Beach	2 to 13 inches of rain	A powerful and slow-moving storm brought heavy rain, strong winds and snow to Central and Southern California and extensive flooding to the County. In Oceano, the Arroyo Grande Creek overflowed, destroying numerous crops and damaging 1 home. The Pacific Dunes RV Park flooded. In Arroyo Grande, flooding along Corbett Creek damage 4 homes and 5 classrooms at AG High School. In Pismo Beach, Pismo Creek flooding damaged homes in Pismo Court Village. In Nipomo, 20 to 30 homes were damaged. In Creston, there was widespread urban flooding.
December 27, 2004	San Luis Obispo County	1 to 6 inches	A powerful Pacific storm brought heavy rain, snow and flooding to Central and Southern California. Flash flooding closed Highway 101 at Gaviota and killed a Paso Robles man.
Late December of 2005 and early January 2006	Cambria and Oceano	4 to 6 inches	In late December of 2005 and early January 2006 a series of storms battered the County. Most of the damage occurred New Years Eve and day. High winds and saturated soils resulted in significant tree falls particularly in the Cambria area where heavy damage was reported to a number of homes and businesses. There was one fatality which was a result of a tree falling on a pick-up truck while it was traveling on U.S. 101 in the Paso Robles area. Damage estimates for both private property loss and the loss and cost to local governments totaled approximately \$3,000,000.
December 19, 2010	San Luis Obispo County, Oceano	5 to 8 inches	A series of and slow-moving storms brought heavy rain, strong winds and light snow to the area. The most severe damages began on December 19, with primarily affected areas in the South County, particularly in the Oceano area. Damages reported to Cal EMA were just over \$2,000,000 in private property losses and an estimated cost and loss total to local governments of just over \$1,100,000 for a total storm damage cost estimate of approximately \$3,135,000.

Flood Hazard Potential

San Luis Obispo County

A Flood Insurance Study conducted by FEMA for San Luis Obispo County noted that runoff in the streams of the County is small, with appreciable flows occurring only during and immediately after precipitation. However, during large storms, stream flow increases rapidly, and flood waters can contain high amounts of debris, causing major flood damage. For many of the water courses that are located in the County, areas that may be inundated in response to 100-year storm events are located adjacent to or near the stream or river channel. Since many of the County's watercourses are located in mountainous or remote areas with little or no development, flooding events along these rivers and streams generally result in minimal impacts. Other watercourses that are located in the County, however, have floodplains that extend well beyond the defined stream or river channel. When a flood occurs along one of these watercourses, and it is located in or near an area that is urbanized, damage to property and infrastructure can be widespread.

In the southern portion of San Luis Obispo County, Arroyo Grande Creek, San Luis Obispo Creek, and their respective tributaries, flow through urbanized areas and that have caused major floods. The north coast area of the County also contains a number of short, steep-gradient creeks that can experience rapid increases in water flows in response to storm events in Cambria. Santa Rosa Creek is a watercourse that has caused significant flooding events. The largest water course in the inland portion of the County is the Salinas River, which is located adjacent to numerous incorporated and unincorporated communities. Although the floodplain of the Salinas River can be extensive, it is generally contained within the river channel. Other major inland water courses include the Estrella River and San Juan Creek. Due to the generally remote locations of these watercourses, flooding impacts are generally not significant.

Communities within San Luis Obispo County

Communities of San Luis Obispo County that have been mapped by FEMA as being located within the 100-year floodplain are described below:

Arroyo Grande

Areas of potential flooding in response to a 100-year storm are located adjacent to Canyon/Meadow Creek on the west side of the City, adjacent to Corbett Canyon and Arroyo Grande Creeks in the eastern portion of the City, and a limited area along Los Berros Creek, in the southeastern portion of the City. Areas that would be inundated in response to a 100-year flood along these creeks are generally located along stream channels; however, in isolated areas, adjacent properties could be adversely affected. Near the confluence of Corbett Canyon and Arroyo Grande Creek, the 100-year floodplain widens, resulting in impacts to properties. The floodplain along Arroyo Grande Creek also widens slightly on the north and south sides of U.S. 101. Although areas subject to flooding from a 100-year flood are limited, floodwater could cause roadways to become impassable, thereby hindering travel and response efforts. Map 5 depicts areas subject to inundation from a 100-year storm, and does not necessarily depict areas that may be affected by local drainage problems. The City has worked to alleviate drainage problems in these areas.

Atascadero

The Salinas River is located in the northeastern and eastern areas of the City. The floodplain of the river is generally removed from the developed areas, however, properties on the east side could be affected by flooding during a 100-year storm. The crossing of Halcon Road over the Salinas River is frequently washed-out in storm events and would be washed-out during a 100-year storm event.

Atascadero Creek extends through the central portion of the City, but has a limited potential for flooding impacts as the 100-year floodplain is generally confined to the channel and adjacent properties. Where Atascadero Creek crosses U.S. 101 and State Route 41, a 100-year flood could cause inundation of the portions of the highways. This would have the potential to result in significant local and regional transportation impacts. Although the 500-year floodplain is not generally used for planning purposes, it should be noted that the area designated as being located within the 500-year floodplain of the Salinas River and Atascadero Creek encompasses approximately 1.5 square miles of the central portion of Atascadero.

In the southeastern portion of Atascadero, flooding hazards could result from 100-year flows in several branches of Paloma Creek. Identified inundation areas are primarily located adjacent to the creek channels, although some more extensive areas could also be affected. In the western portion of the City, flooding along Graves Creek would primarily be restricted to the stream channel.

Map 5 from the San Luis Obispo County Safety Element depicts areas subject to inundation from a 100-year storm, and does not necessarily depict areas that may be affected by local drainage problems. Atascadero has historically experienced drainage and related flooding problems in an area known as the Amapoa/Tecorida Basin, which is located to the east of Atascadero Creek and Morro Road, and south of U.S. Highway 101. This area has been subject to building moratoriums and fee programs to pay for drainage improvements. In recognition of this drainage problem, the lower portion of the basin has a Flood Hazard overlay zoning designation.

The Amapoa/Tecorida drainage basin has been prone to flooding for a variety of reasons. The primary cause of flooding in this area is the result of storm events which cause water flows in Atascadero Creek, greater than the 17-year design storm, to overtop the Atascadero Lake spillway channel banks and flow into the Amapoa/Tecorida basin.

Other factors that have contributed to inadequate drainage in this area include flat topography and low water velocities increasing run-off volumes due to urban development, undersized drainage culverts and channels, particularly at Highway 101, and the lack of a formal method to maintain existing drainage facilities on private property.

A variety of control strategies for correcting the drainage deficiencies of the Amapoa/Tecorida area has been proposed. These measures include improvements to the Atascadero Lake spillway, construction of a new storm drain along Highway 41, requiring drainage analysis for projects located within the basin that increase building density, and provision of a mechanism to facilitate the maintenance of drainage facilities on private property. Construction of the storm drain along Highway 41 has already begun.

Grover Beach

Isolated areas of potential flooding in response to a 100-year storm are located in the northern and western portions of the City that are adjacent to Meadow Creek. Flood hazard areas in the northern portion of the City are restricted to an area south of U.S. 101 and north of Nacimiento Avenue. A mobile home subdivision is located in this area.

In the western part of the City, flooding could affect areas located west of the Union Pacific Railroad tracks. Map 5 depicts areas subject to inundation from a 100-year storm, and does not necessarily depict areas that may be affected by local drainage problems. Local flooding conditions currently exist in two isolated areas within the City where properties are located below street level. One parcel is subject to flooding from a 50-year storm event if sandbags are not used or if cars are parked on the street. For the second parcel a 75-100 year storm event will flood this property, however, an asphalt berm has been constructed which alleviates flooding under storms of lesser magnitude.

Morro Bay

Flooding in the City of Morro Bay could occur as a result of flows in Morro Creek, Little Morro Creek, Chorro Creek, and the several smaller creeks located in the northern portion of the City. Flooding from these creeks could potentially render State Highway 1 bridges over these waterways unusable during a major storm.

During the rains of 1995 Highway 1 was closed through Morro Bay due to flooding. Flooding from Chorro Creek would affect the eastern portion of the City. In 1995, flooding from Chorro Creek inundated Twin Bridges (now Chorro Creek Bridge) for several days, forcing travelers from Los Osos to detour through San Luis Obispo in order to reach Morro Bay. The new Chorro Creek Bridge, completed in 1996, was constructed at a higher elevation than Twin Bridges to avoid future closures due to flooding.

The creeks located in the northern portion of the City traverse areas that have been extensively developed with residential uses. In 1995, houses located along Alva Paul Creek, and other houses in north Morro Bay, were flooded. Also, the area between Highway 41 and Radcliffe Street flooded in 1995 causing much property damage to both residences and businesses. In the isolated areas where the creek floodplains extend beyond the stream channels, flooding impacts could also be significant.

Paso Robles

Several watercourses are located within Paso Robles that have the potential to cause flooding impacts. The Salinas River is the major watercourse located in Paso Robles, and runs through the center of the City. Flows in the Salinas River that could result from a 100-year storm are primarily contained in the river channel. On the west side of the City, flooding from Mountain Springs Creek could affect isolated residential areas.

The area located adjacent to and west of U.S. 101 could also be inundated by runoff from a 100-year storm. 100-year flooding events could result in the inundation of areas in the southwestern portion of the City. In the eastern portion of the City, several unnamed creeks have 100-year floodplains that would primarily affect the creek channel and adjacent properties. In the northern

portion of the City, Huerhuero Creek could cause isolated areas of flooding along the road that leads to the Paso Robles Municipal Airport.

Pismo Beach

The City has two areas with potential flood hazards: the Pismo Creek/Price Canyon and Meadow Creek/Pismo Marsh drainage ways. Since major flooding in 1971, the city, with the aid of the Army Corp of Engineers, has made alterations to Pismo Creek channel to reduce flood hazard. Existing flood plain maps prepared prior to the creek improvements show that substantially developed areas in the city's commercial core and Pismo Creek Planning Areas could be subject to flooding from a 100 year storm.

The majority of the Meadow Creek floodplain within the city limits is contained within the State Department of Fish and Game controlled Pismo Lake Ecological Preserve (Pismo Marsh). The preserve is bounded on all sides by slopes which rise over the 100 year level of flood, thus containing flooding within the preserve boundary. Meadow Creek leaves the preserve at State Highway 1 which crosses the creek via a low lying bridge. The creek flows into the North Beach Campground where it divides into two channels one flowing into the ocean and the other flowing southward into the Grover Beach area. The creek channel floods state Highway 1, the commercial property to the north of the creek at State Highway 1, and the North Beach Campground during periods of heavy storm flows. The level of flooding is affected by tidal conditions.

City of San Luis Obispo

The City of San Luis Obispo is traversed by several creeks, including San Luis Obispo Creek and its major tributaries, Stenner Creek, Brizziolari Creek and Prefumo Creek.

The 100-year floodplains for these creeks encompass extensive areas of the City on the east and west sides of U.S. 101, including the downtown area. Historic flooding on San Luis Obispo Creek, such as the floods of 1969, 1973, and 1995, have resulted in substantial property damage and loss of life. Several areas in the downtown of San Luis Obispo are subject to localized flooding.

Unincorporated Communities of San Luis Obispo County

Major unincorporated communities of San Luis Obispo County that have been mapped by FEMA as being located within the 100-year floodplain are described below.

South Bay

The South Bay area of the County (including the communities of Baywood Park, Los Osos, and Cuesta-by-the Sea) has not been identified as being located within a 100-year storm floodplain by the most recent Flood Insurance Rate Maps. Flooding in response to a 100-year storm is generally confined to shoreline areas surrounding Morro Bay. There are locations in this area, however, that are subject to chronic localized flooding. After a significant rain, localized flooding occurs throughout the Los Osos area. Numerous intersections within the community experience flooding during storm events.

Cambria

Santa Rosa Creek has a history of flooding which has caused severe erosion of the creek banks as well as damage to phone and gas lines, water wells, and bridges. Major bank erosion in the past has caused complete interruption of the town's water supply. The 100-year floodplain for Santa Rosa Creek is generally confined to the creek channel and surrounding areas south of Main Street. However, the West Village business area along Main Street has been subjected to severe flooding as a result of recent flood levels that overtopped the banks of Santa Rosa Creek. A creek bypass and West Village Storm Drain system constructed in 2009 has significantly reduced, but not eliminated, this potential flood scenario.

Cayucos

100-year flood areas near the community of Cayucos are predominately confined to areas adjacent to Cayucos Creek, Little Cayucos Creek, and Willow Creek. Several limited areas of the community along these areas have been designated as being in a 100-year floodplain.

Nipomo

Flooding in the community of Nipomo occurs primarily along Nipomo Creek and its tributaries, such as Deleissiques Creek and Haystack Creek. The 100-year floodplain along these creeks encompasses areas adjacent to the watercourses, along with extensive areas located east and west of U.S. Highway 101.

Oceano

Flooding in Oceano is a result of heavy flows in Arroyo Grande Creek and Meadow Creek. The most significant inundation area is near the creeks' confluences with the ocean. Areas subject to flooding as a result of a 100-year storm generally extend south of Highway 1 and west of Halcyon Road. The Arroyo Grande Creek channel has limited storm capacity and has potential of overtopping levees through town. An emergency response plan has been adopted to deal with potential breach of levees and the wide spreading flooding that may result. Flooding within the town generally occurs at the Oceano County Airport and the Sanitation District Wastewater Plant, along with the residential neighborhoods in low-lying areas around these facilities in particular. This area was subject to the greatest extent of damage in the December 2010 storm.

San Margarita

Yerba Buena Creek, which drains a significant watershed, runs through the community and continues north toward before joining Santa Margarita Creek which empties into the Salinas River. The shadowing effect of Santa Lucia range to the south of the community tends to limit the amount of rainfall. Localized flooding occurs due to potential creek flows and the flat terrain inhibiting runoff to the creeks.

Templeton

Watercourses located in and near the community of Templeton include the Salinas River and Toad Creek. The 100-year floodplain of the Salinas River as it passes to the east of the community is confined to the river channel and does not significantly affect the town. The floodplain for Toad Creek is not extensive. The 100-year flood along this watercourse would have the potential to affect adjacent properties most notably along Salinas and Eddy Streets and an area between Route 101 and Main Street at the north edge of town.

San Miguel

The community of San Miguel is located west of the Salinas River, and north of the confluence of the Estrella River with the Salinas River. The 100-year floodplain of the Salinas River near San Miguel is confined to the river channel and does not significantly affect populated areas of the community. Localized flooding has occurred along Mission Street and the railroad tracks due to the flat terrain in town. Systems to drain area to river have been partially constructed.

Creston

The community of Creston is located between the west and middle branches of Huerhuero Creek. The 100-year floodplains of these creeks are located adjacent to the western and eastern edges of the community and could have the potential to affect adjacent developed properties.

Shandon

The community of Shandon is located southwest of the confluence of San Juan Creek with the Estrella River. The 100-year floodplains of these watercourses are not located within the town of Shandon, but are located adjacent to developed areas. These water courses also cross State Routes 41 and 46 near the town. Flooding along these watercourses could have the potential to adversely affect access to and from the community.

Rural Areas

Many areas are isolated or forced into excessively long detours during and after floods due to flood impacts on roads. These access impacts are a significant “flood hazard.” In 1997 after the Logan fire, severe rains took out California Highway 166 and two CHP officers and two civilians died, in addition to property loss.

Ordinances and Regulations

Arroyo Grande

Ordinance Number 366 C.S. of *The Arroyo Grande Municipal Code* establishes the “Flood Hazard” (F-H) zoning district. The purpose of the ordinance is to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions.

The City of Atascadero’s Zoning Ordinance, 9-3.600, FH (Flood Hazard) Overlay Zone, identifies areas where terrain would present new developments and their users with potential flood hazards. In addition, Ordinance No. 193, *An Ordinance Adding Chapter 5 to Article 7 of the City of Atascadero Municipal Code Relating to Flood Damage Prevention*, provides further guidance to reduce flood damage. It is the purpose of this ordinance to promote the public health, safety, and general welfare and to minimize public and private losses due to flood conditions. Also, Ordinance No. 304 amended Title 6, Chapter 13 of the Atascadero Municipal Code to provide a mechanism to allow the Fire Chief to order the removal of weeds, rubbish, and similar material that has the potential to become a flooding hazard.

Grover Beach

Sections 7300-7361, *Chapter 3 - Flood Damage Prevention Regulations*, of the Grover Beach Municipal Code addresses flood hazards relative to public health, safety and general welfare. The purpose of these regulations is to minimize public and private losses due to flood conditions.

Morro Bay

Local flood regulations for the City of Morro Bay are provided in sections 14.72.010-14.72.060 of *Chapter 14.72- Flood Damage Prevention* contained in the Morro Bay Municipal Code. The intent of these regulations is to reduce public and private losses due to flood damage.

Paso Robles

The City of Paso Robles Municipal Code, *Chapter 21.14 Flood Damage Prevention Regulations* specify methods of reducing flood losses. A variety of standards relative to construction, utilities, and manufactured homes are provided to minimize public and private losses due to flood conditions.

Sections 17.84.010-17.84.170 within *Chapter 17.84, Flood Damage Prevention Regulations* of the San Luis Obispo Municipal Code set forth means to reduce losses from floods. These standards focus on areas located within or near the 100-year floodplain. Section 8.12.010-8.12.010 of the Municipal Code provides a mechanism for the City to require the removal of dangerous obstructions in streambeds that have the potential to obstruct water flow.

Pismo Beach

Local flood regulations for the City of Pismo Beach are provided in Chapters 15.44 *Flood Hazard Area Use Control* and Chapter 17.075 *Flood Plain Overlay Zone*, contained in the Pismo Beach Municipal Code. The intent of these regulations is to reduce public and private losses due to flood damage.

San Luis Obispo

The *San Luis Obispo County Land Use Ordinance and Coastal Zone Land Use Ordinance* (Titles 22 and 23 of the County Code), provides standards for the preparation and submittal of drainage plans for new development. These regulations specify when drainage plans are required, the contents of an adequate drainage plan, drainage standards, and the plan review and approval process. The Land Use Ordinances also contain the County's Floodplain Ordinance, which specifies development standards for areas that have a Flood Hazard (FH) combining land use designation. The development standards contained in the Floodplain Ordinance pertain to land use permit processing and construction standards for new development located in areas that have the potential to be inundated by a 100-year flood.

Relationship to Other Hazards – Cascading Effects

While there are some benefits associated with flooding, such as the replenishment of beach sand, and nutrients to agricultural lands, it is generally considered a hazard to development in floodplains. Floods can cause many cascading effects. Fire can break out as a result of dysfunctional electrical equipment. Hazardous materials can also get into floodways, causing health concerns and polluted water supplies. In many instances during a flood, the drinking water supply will be contaminated.

- **Effects on people and housing.** Direct impacts of flooding can include injuries and loss of life, damage to property and health hazards from ruptured sewage lines and damaged septic systems. Secondary impacts include the cost and commitment of resources for flood fighting services, clean-up operations, and the repair or replacement of damaged structures.
- **Effects on commercial and industrial structures.** Flooding can cause damage to commercial and industrial structures, damage to vegetation, crops and livestock. Beach erosion results in the loss of sand from coastal areas. This hazard can accelerate the rate of erosion of coastal bluffs, and can also contribute to increased wave-related damage to coastal structures.
- **Effects on infrastructure.** Flooding can cause damage to roads, communication facilities and other infrastructure.
- **Effects on agriculture.** Effects on agriculture can be devastating. Flooding can damage crops, livestock and dairy stock. In addition to the obvious impacts on crops and animals, flooding can have deleterious effects on soil and the ability to reinvigorate the agricultural activities impacted once the flood waters recede. Damage to water resources such as underground irrigation systems, water storage reservoirs, springs and other natural water bodies could have a serious effect upon agriculture operations.

Plans and Programs

In San Luis Obispo County, the County Flood Control and Water Conservation District, through the County Public Works Department, is responsible for developing potential projects which could protect life and property from flood hazards through community involvement and establishing funding mechanisms. The District has the authority to maintain and construct flood control improvements on major drainage facilities located throughout the County when specific flood control zones are established.

The County is taking action to:

- Strictly enforce flood hazard regulations both current and revised. FEMA regulations and other requirements for the placement of structures in flood plains shall be followed.
- Maintain standards for development in flood-prone and poorly drained areas. Establish mitigation for new development impacts on flooding.
- Identify areas known to be prone to flooding, such as Los Osos, Avila Valley, Santa Margarita, Cambria, Oceano and Templeton by developing community drainage studies. Seek stakeholder involvement in developing funding mechanisms and in acquiring grants to implement listed flood control improvements.
- Fire, Public Works, and law enforcement agencies will maintain and improve their ability to respond to water hazard emergencies throughout the County.
- Outline the needs for mapping of high-risk areas of the County.

- Participate in the flood insurance program.
- Develop Flood Control Zones and assessment districts to finance capital projects and provide for on-going maintenance of facilities and waterways.

Risk Assessment Conclusion

In San Luis Obispo County, runoff in the streams of the County is varies over the seasons, with appreciable flows occurring only during and immediately after precipitation. However, during large storms, stream flow increases rapidly, and flood waters can contain high amounts of debris, causing major flood damage. For many of the water courses that are located in the County, areas that may be inundated in response to 100-year storm events are located adjacent to or near the stream or river channel. Since many of the County's watercourses are located in mountainous or remote areas with little or no development, flooding events along these rivers and streams generally result in minimal impacts. Other watercourses that are located in the County, however, have floodplains that extend well beyond the defined stream or river channel. When a flood occurs along one of these watercourses, and it is located in or near an area that is urbanized, damage to property and infrastructure can be widespread. This threat is rated as Medium.

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Goal 4	<u>Minimize the level of damage and losses to people, existing and future critical facilities and infrastructure due to flooding.</u>
Objective 4.1	Enhance the ability of community assets, particularly critical facilities, located in the 100-year floodplain to handle existing and projected flood waters.
Mitigation Action 4.A	Review and expand existing policies, procedures and regulations under the San Luis Obispo Flood Control and Water Conservation District in order to reduce the exposure to flood hazards.
Mitigation Action 4.B	Identify flood prone areas within communities and define options under Community Drainage Studies. Engage stakeholders in defining, funding, and implementing community drainage facilities.
Mitigation Action 4.C	Maintain compliance with the National Flood Insurance Program (NFIP) requirements.
Mitigation Action 4.D	Continue to update and enhance Emergency Response Plan for Arroyo Grande Creek Levee System. Develop safeguards for

levee protection. Implement Arroyo Grande Waterway Management Plan to maximize floodway capacity of the facility.

Mitigation Action 4.E Through Development Review process, restrict construction of essential service facilities in the 100-year flood plain.

Mitigation Action 4.F Continue to work cooperatively with the state and federal flood related agencies for funding improvements through grant and agency programs.

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C. Implementation Strategy

Once the LHMP has received formal adoption by the Board of Supervisors, the following action plan, agreed upon by the Local Hazard Mitigation Planning Group, will be used to ensure the Plan is fully implemented and remains an active and relevant document. Actual implementation may be dependent upon funding availability.

ACTION PLAN FOR SAN LUIS OBISPO COUNTY

MITIGATION ACTION		IMPLEMENTATION STRATEGY			
ID	DESCRIPTION	RESPONSIBLE DEPARTMENT	FUNDING SOURCES	COMPLETION DATE	PRIORITY
1.A	Educate Public and Stakeholders	OES - Lead All Support	General Fund	Ongoing	Medium
2.A	Educate Planning Staff	OES – Lead All Support	None Required	Ongoing	Medium
2. B	Continuing Disaster Education for all staff	OES –Lead All Support	None Required	Ongoing	Medium
3.A	EOC training for Sheriff, CAL FIRE and key staff members	OES –Lead CAL- County Fire & Sheriff’s Dept	General Fund	07/01/12	High
3.B	SOP Development (Storm Response)	OES	General Fund	07/01/12	High
3.C	Update County Emergency Operations Plan	OES	General Fund	07/01/12	Medium
3.D	CERT Support	OES	None Required	Ongoing	Low
3.E	Survey Department Heads regarding Emergency	OES	None Required	07/01/12	Medium

	Preparedness Needs				
4.A	Review and expand flood policies, procedures and regulations	OES	General Fund	Ongoing	Low
4.B	Identify flood prone areas and define options under Community Drainage Studies	Public Works	General Fund	Ongoing	High
4.C	Maintain NFIP compliance	Planning & Building Depart.	None Required	Ongoing	Low
4.D	Update and enhance Emergency Response Plans for AG Creek Levee System. Implement AG Waterway Management Plan	Public Works	None Required	Ongoing	Medium
4. E	Restrict Construction in 100 year flood plain	Planning & Building Depart.	None Required	Ongoing	High
4.F	Work with flood agencies for funding improvements	Public Works	Grant	Ongoing	High